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INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Application Number

Filing Date

First Named Inventor

(Use as many sheets as necessary)

Application Number 10/065,551

Filing Date 10/29/2002

First Named Inventor Chistyakov

Art Unit 1765

Examiner Name Duy Vu Nguyen Deo

Attorney Docket Number ZON-004

U. S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.1	Document Number  Number-Kind Code <sup>2</sup> (* known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
Mu	Al	US- 4,983,253	01/08/1991	Wolfe, et al.	_	
m	A2	US- 5,728,261	03/17/1998	Wolfe, et al.		
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	FOREIGN PATENT DOCUMENTS									
Examiner	Cite	Foreign Patent Document	Publication Date	Name of Patentee or	Pages, Columns, Lines,					
Initials*	No.1	Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear					
pm	B3	EP 0428 161 A2	05/22/1991	Kokusai Electric Co						
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Substitute for form 1449B/PTO Complete if Known Application Number 10/065,551 Filing Date INFORMATION DISCLOSURE 10/29/2002 First Named Inventor STATEMENT BY APPLICANT Chistyakov Art Unit 1765 (Use as many sheets as necessary) Examiner Name Duy Vu Nguyen Deo Sheet Attorney Docket Number ZON-004

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²			
The	C13	Encyclopedia Of Low Temperature Plasma, Pg. 119, Vol. 3.	~			
	C14	Encyclopedia Of Low Temperature Plasma, Pg. 123, Vol. 3.	~			
Mu	C15	CHISTYAKOV, High-Power Pulsed Magnetron Sputtering, Application No.: 10/065,277, Filed: September 30, 2002.				
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

GAOUS INDO Complete if Known Application Number 10/065,551 Filing Date 10/29/2002 First Named Inventor Chistyakov Art Unit 1765 Examiner Name Duy Vu Nguyen

(Use as many sheets as necessary)

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Attomey Docket Number Sheet **ZON-004** 

	NON PATENT LITERATURE DOCUMENTS							
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²					
Mn	C13	CHISTYAKOV, Roman, High-Power Pulsed Magnetron Sputtering, Application No.: 10/065,277, Filed: September 30, 2002.						
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Complete if Known Substitute for form 1449A/PTO 10/065,551 Application Number INFORMATION DISCLOSURE 10/29/2002 Filing Date First Named Inventor STATEMENT BY APPLICANT Chistyakov Art Unit 1765 (use as many sheets as necessary) Nguyen **Examiner Name ZON-004** Attorney Docket Number of Sheet

			U.S. PATE	NT DOCUMENTS	
Examiner Initials	Cite No.1		Publication Date MM-DD-YYYY	Name of Patentee or Appricant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	No.1	Country Code 3 - Number 4 -	Kind Code 5 (# known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	T6
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Graw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

2 Applicant's unique citation designation number (optional) See Kinds Codes of USPTO Patent Documents at www.uspto.com

901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

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Complete if Known Substitute for form 1449B/PTO 10/065,551 **Application Number** INFORMATION DISCLOSURE 10/29/2002 Filing Date Chistyakov First Named Inventor STATEMENT BY APPLICANT Group Art Unit 1765 Nguyen (use as many sheets as necessary) **Examiner Name** Attorney Docket Number ZON-004 of

OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher city and/or country where published.					
yfu	10	BOOTH, ET AL., The Transition From Symmetric To Asymmetric Discharges In Pulsed 13.56 MHz Capacity Coupled Plasmas, J. Appl. Phys., July 15, 1997, Pgs. 552-560, Vol. 82 (2), American Institute of Physics.	ļ			
	C2	BUNSHAH, ET AL., Deposition Technologies For Films And Coatings, Materials Science Series, Pgs. 176-183, Noyes Publications, Park Ridge, New Jersey.				
	C3	DAUGHERTY, ET AL., Attachment-Dominated Electron-Beam-Ionized Discharges, Applied Science Letters, May 15, 1976, Vol. 28, No. 10, American Institute of Physics.				
	C4	GOTO, ET AL., Dual Excitation Reactive Ion Etcher for Low Energy Plasma Processing, J. Vac. Sci. Technol. A, Sept./Oct. 1992, Pgs. 3048-3054, Vol.10, No. 5, American Vacuum Society.				
	C5	KOUZNETSOV, ET AL., A Novel Pulsed Magnetron Sputter Technique Utilizing Very High Target Power Densities, Surface & Coatings Technology, Pgs. 290-293, Elsevier Sciences S.A.				
	C6	LINDQUIST, ET AL., High Selectivity Plasma Etching Of Silicon Dioxide With A Dual Frequency 27/2 MHz Capacitive RF Discharge.				
	C7	MACAK, Reactive Sputter Deposition Process of Al2O3 and Characterization Of A Novel High Plasma Density Pulsed Magnetron Discharge, Linkoping Studies In Science And Technology, 1999, Pgs. 1-2, Sweden.				
The	C8	MACAK, ET AL., Ionized Sputter Deposition Using An Extremely High Plasma Density Pulsed Magnetron Discharge, J. Vac Sci. Technol. A., July/August 2000, Pgs. 1533-37, Vol. 18, No. 4, American Vacuum Society				

Examiner Signature Porter My Sorold Date Considered 1/10/05

EXAMINER: Initial if reference considered. Thether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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<sup>1</sup> Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

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Complete if Known Substitute for form: 1449B/PTO 10/065,551 **Application Number** INFORMATION DISCLOSURE 10/29/2002 Chistyakov First Named Inventor STATEMENT BY APPLICANT Group Art Unit 1765 Nguyen Examiner Name (use as many sheets as necessary) ZON-004 / Attorney Docket Number of Sheet

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	. 5
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	772
Mu	C9	MOZGRIN. ET AL High-Current Low-Pressure Quasi -Stationary Discharge In A Magnetic Field: Experimental Research, Plasma Physics Reports, 1995, Pgs. 400-409, Vol. 21, No. 5, Mozgrin, Feitsov, Khodachenko.	
	C10	ROSSNAGEL, ET AL., Induced Drift Currents In Circular Planar Magnetrons, J. Vac. Sci. Technol. A., January/February 1987, Pgs. 88-91, Vol. 5, No. 1, American Vacuum Society.	
	CII	SHERIDAN, ET AL., Electron Velocity Distribution Functions In A Sputtering Magnetron Discharge For The EXB Direction, J. Vac. Sci. Technol. A., July/August 1998, Pgs. 2173-2176, Vol. 16, No. 4, American Vacuum Society.	
Mu	CIZ	STEINBRUCHEL, A Simple Formula For Low-Energy Sputtering Yields. Applied Physics A., 1985, Pgs. 37-42, Vol. 36, Springer-Verlag.	
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Examiner Date Signature

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

Electronic Version v18 Stylesheet Version v18.0

> Title of Invention

JUN FIVED High-Power Pulsed Magnetically Enhanced Plas **Processing** 

Application Number:

Search string:

10/065551

Confirmation Number:

7685

First Named Applicant:

Roman Chistyakov

Attorney Docket Number: zon-004

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or 5863392 or 6057244 or 6451703 or 6447691 or 6471833 or 20020019139 or 20020114897 or

20030006008).pn.

## **US Patent Documents**

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
The	1	4588490	1986-05-13	Cuomo et al.		204	298
	2	5083061	1992-01-21	Koshiishi et al.	]	315	111.81
Pur	3	5728278	1998-03-17	Okamura et al.	]	204	298.11
Pr.	4	5795452	1998-08-18	Kinoshita et al.	]	204	298.37
m	5	5863392	1999-01-26	Drummond et al.		204	192.12
m	6	6057244	2000-05-02	Hausmann et al.		438	706
m	7	6451703	2002-09-17	Liu et al.	B1	438	710
a.	8	6447691	2002-09-10	Denda et al.	B1	216	61
m	9	6471833	2002-10-29	Kumar et al.	B2	204	192.37

## **US Published Applications**

Note: Applicant is not required to submit a paper copy of cited US Published Applications

init	Cite.No.	Pub. No.	Date	Applicant	Kind	Class	Subclass
m	1	20020019139	2002-02-14	Zhang et al.	A1	438	714
The	2	20020114897	2002-08-22	Sumiya et al.	A1	427	569
	3	20030006008	2003-01-09	Horioka et al.	A1	156	345.46

Signature

Examiner Name

Date

Podray McGarle

1/0/05